

1 15. (Twice amended) [In an *E. coli* RecA protein or a] A mutant RecA protein [having] homolog  
2 comprising a MAW motif homologous to the *E. coli* MAW motif[, a manufactured RecA  
3 homolog protein mutant] and having enhanced DNA binding activity compared to said  
4 protein's wildtype, wherein a naturally occurring amino acid residue located within [the] said  
5 protein's homolog of *E. coli* residues 40 to 65, shown in SEQ ID NO: 3, inclusive, but  
6 excluding [the] said protein's homolog of *E. coli* residues 47 and 51 (SEQ ID NO: 3, residues  
7 8 and 12), is replaced with [a replacement] an aromatic amino acid residue.

1 27. (Twice amended) [In an *E. coli* RecA protein or a] A mutant RecA protein [having] homolog  
2 comprising a MAW motif homologous to the *E. coli* MAW motif[, a manufactured RecA  
3 homolog protein mutant] and having enhanced DNA binding activity compared to said  
4 protein's wildtype, wherein a naturally occurring amino acid residue located at [the] said  
5 protein's homolog of *E. coli* residues 47 or 51, shown in SEQ ID NO: 3[,] (residues 8 or 12),  
6 is replaced with a tryptophan residue.

Claims 1, 15, and 27 are restated below, as amended:

1 1. (Restated) A mutant RecA protein homolog comprising a MAW motif homologous to the *E.*  
2 *coli* MAW motif and having enhanced DNA binding activity compared to said protein's  
3 wildtype, wherein a naturally occurring amino acid residue located within said protein's  
4 homolog of *E. coli* residues 40 to 65, inclusive, shown in SEQ ID NO: 3, is replaced with an  
5 amino acid residue which is volumetrically larger than the replaced amino acid residue.

1 15. (Restated) A mutant RecA protein homolog comprising a MAW motif homologous to the *E.*  
2 *coli* MAW motif and having enhanced DNA binding activity compared to said protein's  
3 D<sub>2</sub> wildtype, wherein a naturally occurring amino acid residue located within said protein's  
4 homolog of *E. coli* residues 40 to 65, shown in SEQ ID NO: 3, inclusive, but excluding said  
5 protein's homolog of *E. coli* residues 47 and 51 (SEQ ID NO: 3, residues 8 and 12), is replaced  
6 with an aromatic amino acid residue.

1 27. (Restated) A mutant RecA protein homolog comprising a MAW motif homologous to the *E.*  
2 D<sub>3</sub> *coli* MAW motif and having enhanced DNA binding activity compared to said protein's  
3 wildtype, wherein a naturally occurring amino acid residue located at said protein's homolog  
4 of *E. coli* residues 47 or 51, shown in SEQ ID NO: 3 (residues 8 or 12), is replaced with a  
5 tryptophan residue.

#### Comments


This amendment is submitted to clarify that the claims are directed to RecA protein mutants (as opposed to wildtypes) having the characteristic of enhanced DNA binding activity over their respective wildtypes. Minor grammatical changes have been made to insure consistency and clear meaning within the claims. Applicant respectfully requests that the Examiner enter this amendment.

#### Conclusion

Applicant respectfully submits that claims 1-27 are in condition for allowance and requests that the Examiner issue a Notice of Allowance of these claims.

Respectfully submitted,

Date: 6/15/01

  
R. Perry McConnell  
Registration No. 38,239  
R. Perry McConnell, P.C.  
9001 Forest Crossing, Suite F  
The Woodlands, Texas 77381  
Telephone: 281-296-9200  
Facsimile: 281-296-9393

CERTIFICATE OF TRANSMISSION VIA FACSIMILE UNDER 37 C.F.R. § 1.8

I hereby certify that the above **Supplementary Amendment** is being transmitted to the Assistant Commissioner of Patents, Washington, D.C. 20231, via facsimile to 703-308-0294, on the 15<sup>th</sup> day of June, 2001.

